

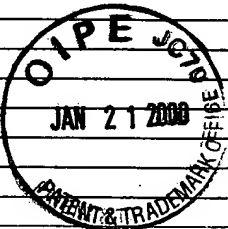
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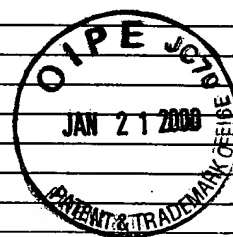


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<p>Substitute for form 1449A/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(use as many sheets as necessary)</p>		Complete if Known	
		Application Number	09/453,109
		Filing Date	December 2, 1999
		First Named Inventor	Mark R. Prausnitz
		Group Art Unit	
		Examiner Name	
Sheet 1 of 7	Attorney Docket Number	GTRC 2139	

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	US Patent Document		Name of Patentee or Applicant of Cited Document	Date of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
MMK		Re. 25,637		Kravitz, et al.	09-08-1964	
MMK		2,893,392		Wagner, et al.	07-07-1959	
MMK		3,034,507		McConnell, et al.	05-15-1962	
MMK		3,086,530		Groom	04-23-1963	
MMK		3,123,212		Taylor, et al.	03-03-1964	
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MMK		3,221,739		Rosenthal	12-07-1965	
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MMK		3,556,080		Hein	01-19-1971	
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MMK		4,159,659		Nightingale	07-03-1979	
MMK		4,222,392		Brennan	09-16-1980	
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MMK		4,969,468		Byers, et al.	11-13-1990	
MMK		5,035,711		Aoki, et al.	07-30-1991	
MMK		5,054,339		Yacowitz	10-08-1991	
MMK		5,138,220		Kirkpatrick	08-11-1992	
MMK		5,250,023		Lee, et al.	10-05-1993	





Examine Signature	<i>Matthew P. Renner</i>	Date Considered	6/8/2001
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MLK		5,279,544		Gross, et al.	01-18-1994	
MLK		5,279,552		Magnet	01-18-1994	
MLK		5,335,670		Fishman	08-09-1994	
MLK		5,364,374		Morrison, et al.	11-15-1994	
MLK		5,383,512		Jarvis	01-24-1995	
MLK		5,401,242		Yacowitz	03-28-1995	
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MLK		5,611,806		Jang	03-18-1997	
MLK		5,611,809		Marshall, et al.	03-18-1997	
MLK		5,618,295		Min	04-08-1997	
MLK		5,632,957		Heller, et al.	05-27-1997	
MLK		5,658,515		Lee, et al.	08-19-1997	
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MLK		5,801,057		Smart, et al.	09-01-1998	
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MLK		5,848,991		Gross, et al.	12-15-1998	
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MLK		5,883,211		Sassi, et al.	03-16-1999	

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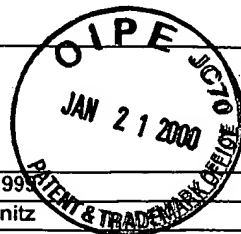
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		First Named Inventor	Mark R. Prausnitz
		Group Art Unit	
		Examiner Name	
Sheet 4 of 7	Attorney Docket Number	GTRC 2139	



OTHER ART – NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
MR		"Single-crystal whiskers," <i>Biophotonics Int'l</i> p. 64 (Nov./Dec. 1996).	
MR		"101 Uses for Tiny Tubules," <i>Science</i> 247 (1990).	
MR		AMSDEN & GOOSEN, "Transdermal Delivery of Peptide and Protein Drugs: an Overview," <i>AIChE Journal</i> 41(8):1972-1997 (1995).	
MR		BRONAUGH & MAIBACH, <u>Percutaneous Absorption, Mechanisms--Methodology--Drug Delivery</u> (Marcel Dekker, New York 1989).	
MR		BRUMLIK & MARTIN, "Template Synthesis of Metal Microtubules," <i>J. Am. Chem. Soc.</i> 113:3174-3175 (1991).	
MR		DESPONT, et al., "High-Aspect-Ratio, Ultrathick, Negative-Tone Near-UV Photoresist for MEMS," <i>Proc. of IEEE 10th Annual International Workshop on MEMS</i> , Nagoya, Japan, pp. 518-522 (Jan. 26-30, 1997).	
MR		EDELL, et al., "Factors Influencing the Biocompatibility of Insertable Silicon Microshafts in Cerebral Cortex," <i>IEEE Transactions on Biomedical Engineering</i> 39(6):635-43 (1992).	
MR		FRAZIER & ALLEN, "Metallic Microstructures Fabricated Using Photosensitive Polyimide Electroplanting Molds," <i>Journal of Microelectromechanical Systems</i> 2:87-97 (1993).	
MR		FRAZIER, et al., "Two dimensional metallic microelectrode arrays for extracellular stimulation and recording of neurons", <i>IEEE Proceedings of the Micro Electro Mechanical Systems Conference</i> , pp. 195-200 (1993).	
MR		HADGRAFT & GUY, eds., <u>Transdermal Drug Delivery: Developmental Issues and Research Initiatives</u> (Marcel Dekker, New York 1989).	

Examiner's Signature	Date Considered
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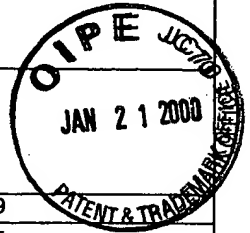


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		First Named Inventor	Mark R. Prausnitz		
		Group Art Unit			
Examiner Name					
Sheet	5	of	7	Attorney Docket Number	GTRC 2139



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MP		HAGA, et al., "Transdermal iontophoretic delivery of insulin using a photoetched microdevice," <i>J. Controlled Release</i> 43:139-49 (1997).	
MP		HASHMI, et al., "Genetic Transformation of Nematodes Using Arrays of Micromechanical Piercing Structures," <i>BioTechniques</i> 19(5):766-70 (1995).	
MP		HENRY, et al., "Microfabricated microneedles: A novel method to increase transdermal drug delivery" <i>J. Pharm. Sci.</i> 87:922-25 (1998).	
MP		HENRY, et al., "Micromachined Needles for the Transdermal Delivery of Drugs," <i>Micro Electro Mechanical Systems</i> , Heidelberg, Germany, pp. 494-98 (Jan. 26-29, 1998).	
MP		HOFFERT, "Transcutaneous methods get under the skin," <i>The Scientist</i> 12 (1998).	
MP		JAEGER, <i>Introduction to Microelectronic Fabrication</i> (Addison-Wesley Publishing Co., Reading MA 1988).	
MP		JANSEN, et al., "The Black Silicon Method IV: The Fabrication of Three-Dimensional Structures in Silicon with High Aspect Ratios for Scanning Probe Microscopy and Other Applications," <i>IEEE Proceedings of Micro Electro Mechanical Systems Conference</i> , pp. 88-93 (1995).	
MP		LAERMER, et al., "Bosch Deep Silicon Etching: Improving Uniformity and Etch Rate for Advanced MEMS Applications," <i>Micro Electro Mechanical Systems</i> , Orlando, FL, USA, (Jan. 17-21, 1999);	
MP		LANGER, "Drug Delivery and Targeting," <i>Nature</i> 392:5-10 (1998).	
MP		LEHMANN, "Porous Silicon--A New Material for MEMS", <i>IEEE Proceedings of the Micro Electro Mechanical Systems Conference</i> , pp. 1-6 (1996).	

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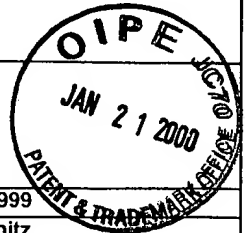


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Sheet 6 of 7	Attorney Docket Number	GTRC 2139	



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mk		LIN, et al., "Silicon Processed Microneedles," <i>The 7th International Conference on Solid-State Sensors and Actuators</i> 237-240 (1993).	
mk		MARTIN, et al., "Template Synthesis of Organic Microtubules," <i>J. Am. Chem. Soc.</i> 112:8976-8977 (1990).	
mk		NAJAFI, et al., "Strength Characterization of Silicon Microprobes in Neurophysiological Tissues," <i>IEEE Transactions on Biomedical Engineering</i> 37(5): 474-481 (1990).	
mk		PRAUSNITZ, "Reversible Skin Permeabilization for Transdermal Delivery of Macromolecules," <i>Critical Reviews in Therapeutic Drug Carrier Systems</i> 37(5): 474-481 (1990).	
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mk		RUNYAN, et al., <i>Semiconductor Integrated Circuit Processing Technology</i> , Addison-Wesley Publishing Co.:Reading, MA, 1990.	
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mk		TALBOT & PISANO, "Polymolding: Two Wafer Polysilicon Micromolding of Closed-Flow Passages for Microneedles and Microfluidic Devices," <i>Solid-State Sensor and Actuator Workshop Hilton Head Island, South Carolina, June 8-11</i> 266-268 (1988).	

Examiner's Signature	<i>Matthew Kremer</i>	Date Considered	6/8/2001
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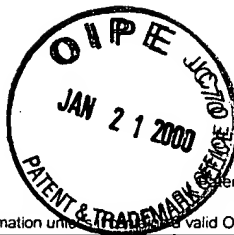
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myk		TRIMMER, et al., "Injection of DNA into Plant and Animal Tissues with Micromechanical Piercing Structures," <i>IEEE Proceedings of Micro Electro Mechanical Systems Conference</i> , pp. 111-15 (1995).	
myk		WEBER, et al., "Micromolding - a powerful tool for the large scale production of precise microstructures," <i>Proc. SPIE - International Soc. Optical Engineer</i> 2879:156-167 (1996).	
myk		ZUSKA, "Microtechnology Opens Doors to the Universe of Small Space," <i>Medical Device and Diagnostic Industry</i> , p. 131 (1997).	

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